

STRAIGHTPATH<sub>®</sub>  
CONNECTING PEOPLE WITH INTEGRITY

Straight Path Communications,  
Inc.  
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July 7, 2016

**VIA ELECTRONIC FILING**

Ms. Marlene H. Dortch  
Secretary  
Federal Communications Commission  
445 12<sup>th</sup> Street, SW  
Washington, DC 20554

**Re: Notice of *Ex Parte* Presentation**

**GN Docket No. 14-177, *Use of Spectrum Bands Above 24 GHz for Mobile Radio Services***

On July 6, 2016, Jerry Pi, Chief Technology Officer of Straight Path Communications, Inc. ("Straight Path"), Russell Fox of Mintz Levin and I conducted separate meetings with each of the following: Edward Smith, Legal Advisor to Chairman Wheeler (along with Arielle Diamond, Legal Intern to Chairman Wheeler); Johanna Thomas, Legal Advisor to Commissioner Rosenworcel; Brendan Carr, Legal Advisor to Commissioner Pai; and Erin McGrath, Legal Advisor to Commissioner O'Rielly. In addition, we conducted a single meeting with the following members of the Commission's staff:

Wireless Telecommunications Bureau:

- Blaise Scinto
- Catherine Schroeder
- John Schauble
- Simon Banyai
- Stephen Buenzow (by phone)
- Nancy Zaczek (by phone)

Office of Engineering and Technology:

- Martin Doczkat
- Barbara Pavon
- Nicholas Oros

International Bureau:

- Chip Fleming

Each meeting related to the above-referenced proceeding. At each meeting with Commissioners' legal advisors, we distributed the attached material. Consistent with our other submissions in this proceeding, we pointed out the public interest benefits of making millimeter wave spectrum available for terrestrial operations. We noted that many independent, third party analyses show consumer behavior driving the need for additional capacity for high-bandwidth wireless terrestrial and mobile applications. In contrast, we noted that there have been only self-serving, vague, and last-minute statements from satellite companies about the alleged requirements for additional satellite spectrum capacity. These most recent assertions are contradicted by, among other things,

over a decade of inattention to the 40-42 GHz band, to which satellite interests have had access. We urged the Commission to include this band in the Further Notice of Proposed Rulemaking as a potential home for additional 5G terrestrial operations.

Nevertheless, Straight Path has supported satellite industry access to millimeter wave spectrum under reasonable conditions.<sup>1/</sup> The record is clear, however, that the conditions under which satellite interests seek access to millimeter wave spectrum will devastate terrestrial 5G operations, undermining the purpose of this proceeding.<sup>2/</sup> In order for wireless providers to offer fixed and mobile gigabit broadband services, they must not be restricted by regulations to protect satellite operations at the expense of terrestrial operations. Allowing satellite licensees the rights they request at 37/39 GHz will defeat the Commission's goals, compromise the United States' position as the leader in millimeter wave mobile technology, and disserve the public interest.

We also pointed out that terrestrial use of millimeter wave spectrum will help facilitate rural broadband deployment—far more effectively and expeditiously than would satellite use of that same spectrum. As Straight Path has advocated, millimeter wave systems can be deployed on a wide-area basis; they will not be limited to small-cell or hot-spot applications.<sup>3/</sup> Moreover, with deployment of terrestrial 5G on a wide-area basis, the economics of providing broadband in rural areas is stronger for terrestrial providers than for satellite operators. The Commission should ensure that the rules do not compromise providers' ability to use 5G terrestrial spectrum even in rural areas.

Finally, Mr. Fox spoke to Brian Regan of the Wireless Telecommunications Bureau on July 6. He urged the Commission not to adopt unrealistic substantial service requirements for incumbent licensees that will be afforded additional license flexibility. While it may be reasonable to impose different substantial service obligations on incumbents, simply accelerating the same performance obligations that will apply to new licensees fails to recognize marketplace conditions. At 39 GHz, Straight Path has urged the Commission to “repack” the spectrum to create large contiguous channels, consistent

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<sup>1/</sup> See, e.g., Letter from Davidi Jonas, CEO and President, Straight Path Communications, Inc. to Marlene H. Dortch, Secretary, FCC, GN Docket No. 14-177, at 4 (filed June 14, 2016).

<sup>2/</sup> See, e.g., Comments of Straight Path Communications, Inc., GN Docket No. 14-177, *et al.*, at 30-37 (filed Jan. 27, 2016) (“If the PFD limit of FSS is increased to -105 dBW/m<sup>2</sup> /MHz, with three satellites in the sky, our analysis shows that the coverage area reduction to 5G mobile services, in-band backhaul, and HAPS will be 15%, 30%, and 80%. This will cause serious performance degradation to the terrestrial services, and it will likely force terrestrial service operators to plan their networks according to the worst-case scenario and suffer a significant increase in 5G rollout cost.”) (“Straight Path Comments”).

<sup>3/</sup> See, e.g., Straight Path Comments at 8-13 (noting that “[t]he strongest value proposition for mmWave 5G is as a wide-area Gbps mobile broadband technology, particularly when compared to other alternatives such as sub-6 GHz cellular systems (which carries prohibitively high per megahertz spectrum costs) or Wi-Fi hot spots (which requires prohibitively high deployment density).”).

with the Commission's goals.<sup>4/</sup> However, an overly aggressive performance requirement for 39 GHz incumbents might discourage repacking in favor of retaining the current band plan, which would more easily support expedited performance requirements using today's frequency division duplexing ("FDD") equipment. That result is contrary to the public interest, which favors introduction of new technologies on the wider channels Straight Path and others have proposed. Accordingly, licensees that voluntarily repack with wider bandwidths, presumably using time division duplexing ("TDD") technologies, should be permitted the full license term to meet the performance requirements. Alternatively, instead of imposing the same performance requirements on incumbent licensees as will imposed on new licensees, only earlier, the Commission should require incumbent licensees to satisfy two performance obligations—one mid-way through a new license term and a final performance obligation that is the same as new licensees. The interim performance requirement should be, at most, fifty percent (50%) of the final obligation.

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Pursuant to Section 1.1206(b)(2) of the Commission's rules, an electronic copy of this letter is being filed for inclusion in the above-referenced docket and sent to each member of the Commission's staff with whom we met. Please direct any questions regarding this filing to the undersigned.

Respectfully submitted,

/s/ Davidi Jonas

Davidi Jonas  
CEO and President  
Straight Path Communications, Inc.

Attachment

cc: (via e-mail, with attachment, to all Commission staff noted above)

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<sup>4/</sup> See *Use of Spectrum Bands Above 24 GHz For Mobile Radio Services*, GN Docket No. 14-177, *et al.*, Notice of Proposed Rulemaking, 30 FCC Rcd. 11878, ¶ 20.

# **Straight Path Communications Inc.**

FCC MEETINGS

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JULY 6, 2016

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# Topics for Discussion

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This Proceeding is a Unique Opportunity to Meet the Needs of 5G *Mobility*

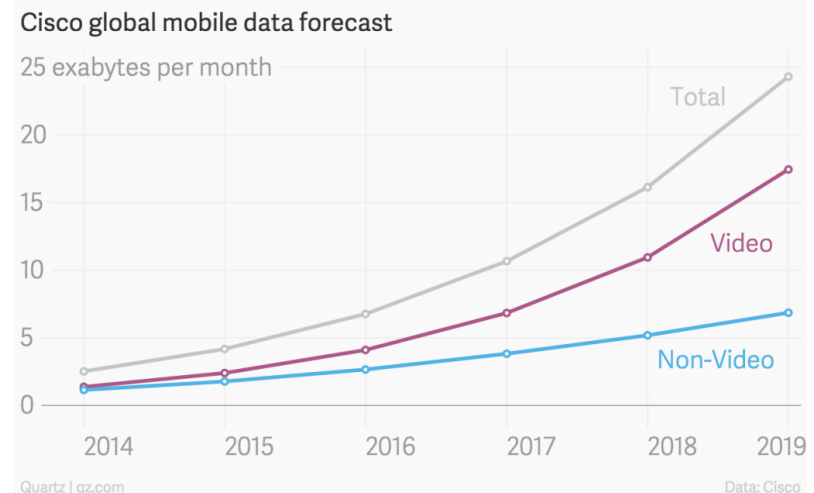
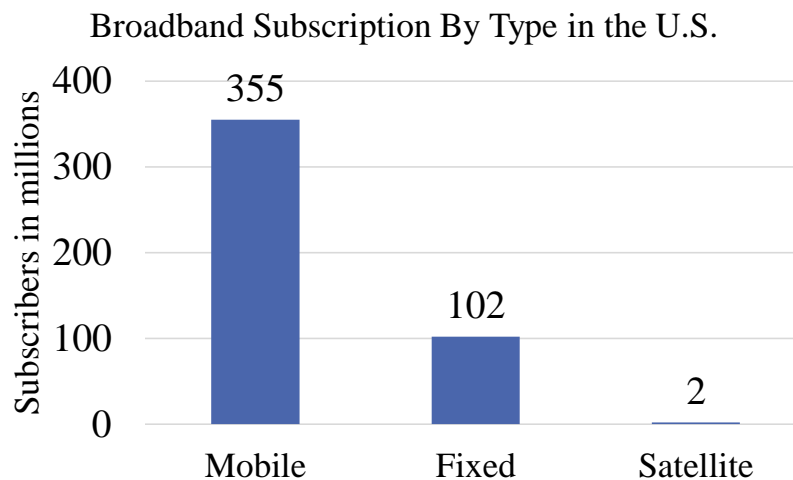
Satellite Use of 28/37/39 GHz Must Not Impair 5G

Re-banding and Re-packing Achieve Greater Use of 39 GHz Band

Progressive Substantial Service Requirements Support Smooth 5G Takeoff

# This Proceeding is a Unique Opportunity to Meet the Needs of 5G *Mobility*

Mobile computing and mobile Internet dominate subscription, use, value, and growth



# The Need is Great for 5G *Mobility* Spectrum

## Satellite Spectrum (10 – 60 GHz)

10.7 – 13.25 GHz

13.75 – 14.5 GHz

15.43 – 15.63 GHz

17.3 – 17.8 GHz

18.3 – 20.2 GHz

24.75 – 25.25 GHz

27.5 – 30 GHz\*

37.5 – 42 GHz†

47.2 – 50.2 GHz

\* A portion is secondary to LMDS

† Co-primary with Fixed Service

Satellite already enjoys a vast amount of spectrum in 10 – 60 GHz

- A total of more than 16 GHz of spectrum is already available for satellite services
- Large segments (e.g., 40 – 42 GHz, 47.2 – 50.2 GHz) lying fallow

The biggest challenge for satellite broadband is **economics**, not spectrum

- The 40 – 42 GHz band is a glaring example why expanded rights in the 37/39 GHz band will likely not help satellite broadband, although it will surely hurt 5G mobile services
- 5G will further lower broadband cost to a level with which satellite cannot compete in the mass market

The NPRM presents a great opportunity for the Commission to meet the public interest for more *mobile* spectrum

- No spectrum in 10 – 60 GHz has been allocated for mobile broadband until now
- 5G mobile broadband needs unencumbered access to licensed spectrum

Other than self-interested statements by satellite providers, the record does not support the need for additional satellite spectrum.

# Any Satellite Use of the 28/37/39 GHz Bands Must Not Impair 5G Mobility

Satellite interferes with 5G very differently in the 28 GHz band and in the 37/39 GHz band

- Satellite uplink in 28 GHz would only interfere with 5G stations close by
- Satellite downlink in 37/39 GHz could interfere with every 5G station in the band across the nation (do not increase PFD)

Straight Path supports accommodation of satellite service provided it does not jeopardize 5G

- Only allow FSS gateway stations in 37/39 GHz band
- One gateway station per PEA without terrestrial license (total more than 400 gateway stations across the U.S.)
- Avoid populated areas and provide ample exclusion zones to mitigate interference
- More gateway stations can be deployed upon acquiring terrestrial license or rights via auction or secondary market
- Straight Path 5/13/2016 *ex partes* demonstrate compromise, whereas satellite requests (e.g. Boeing application) are single minded

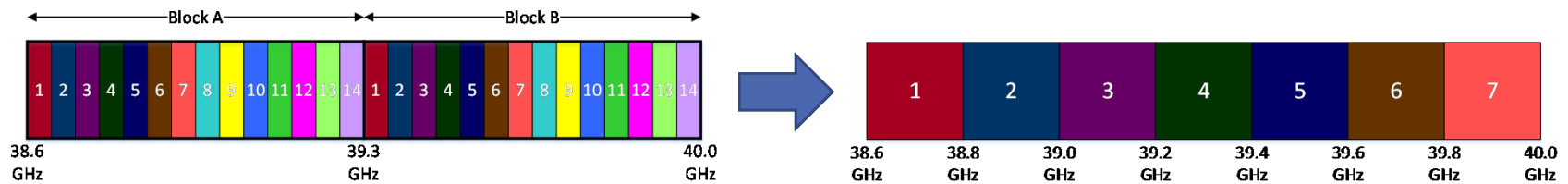
FSS should share the 37.5 – 42 GHz band with UMFUS based on the current “soft segmentation” regime

- “Soft segmentation” is a more prudent approach than a single approach across the whole V-band (37.5 – 42 GHz)
- No increase of FSS PFD limit in the 37.6 – 40 GHz band (5G needs at least one band that is unencumbered by satellite)
- Increase of FSS PFD in the 37 – 37.6 GHz band and the 40 – 42 GHz band could be considered
- FNPRM should consider allowing UMFUS in the 40 – 42 GHz band
  - Commission should adopt proposed 75 dbm put forth in “fact sheet” to allow for wide area coverage (not limit 5G use cases)

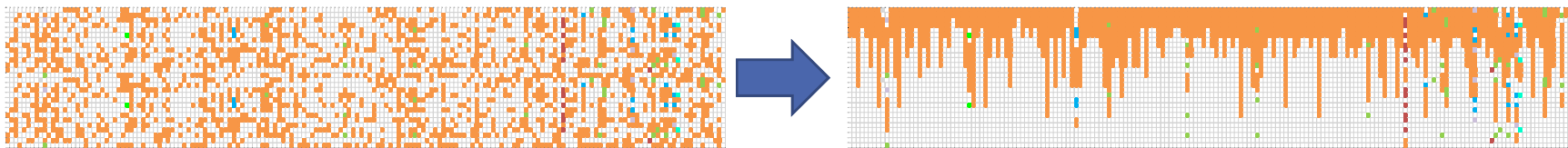


## Re-banding and Re-packing Achieve Greater Use of 39 GHz Band

Re-banding to wider channels for larger capacity and higher throughput in 5G



Re-packing ASAP to minimize fragmentation and enable rapid wide-area 5G rollout



# Progressive Substantial Service Requirements Support Smooth 5G Takeoff

Option A – Incumbents to exchange existing licenses to UMFUS licenses before renewal of current licenses (and in exchange to deploy UMFUS services quickly)

- The current performance requirement should apply
- The renewal should include the remainder of the current license term plus the additional ten-year term

Option B – Incumbents to demonstrate substantial service for renewal before the end of current term (and convert the licenses to UMFUS licenses upon renewal)

- No performance requirement under current rules
- Ample time (e.g. 5+/10 years) should be provided to allow incumbents to demonstrate substantial service under the new (and to-be-determined) requirements for UMFUS licenses

Allow incumbents to choose either option depending on markets and existing businesses

- Allows incumbents to make spectrum “5G ready” as soon as possible
- Ensures U.S. operators have the spectrum needed in time to lead the world in 5G